

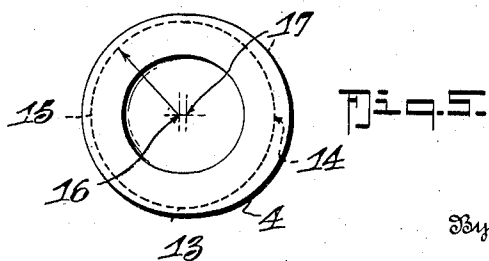
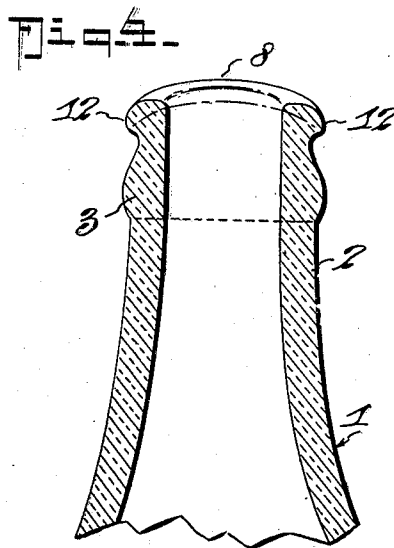
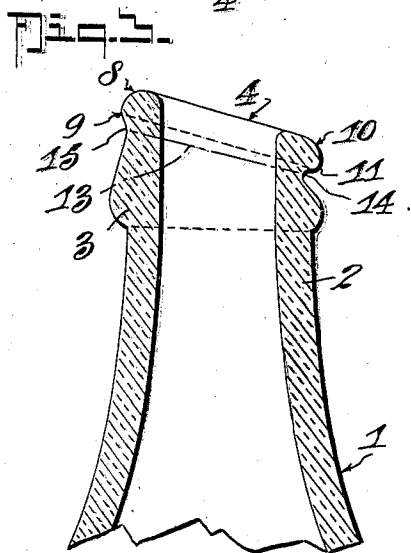
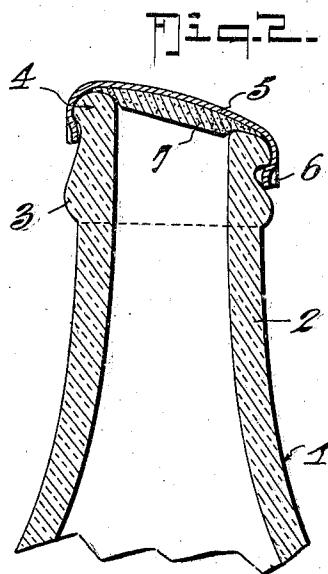
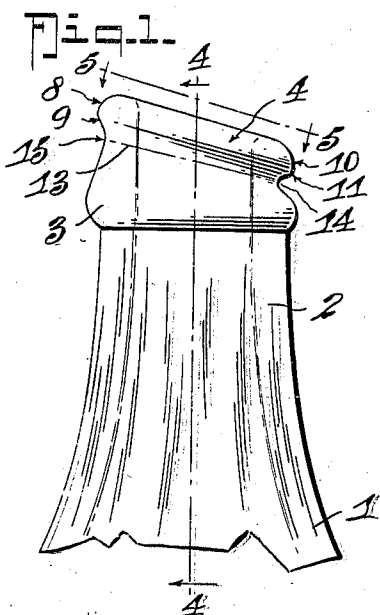
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M. S. WEAVER

2,340,353

BOTTLE

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UNITED STATES PATENT OFFICE

2,340,353

BOTTLE

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3 Claims. (Cl. 215—31)

This invention relates to an improvement in beverage bottles of the type having a slanting elliptical locking ring, such as is shown in my prior patent, No. 1,773,291, granted August 19, 1930.

In my prior patent, the slanting locking ring of the bottle was shown of uniform depth or width transversely of the bottle, corresponding with the shape of the locking ring on the usual flat top bottle ordinarily used heretofore for beverages. I have found that bottles of this type having slanting locking rings of uniform width are not entirely satisfactory for use in the standard crowning machines that are used to apply crown caps thereto, either as to the fitting of the crown to the locking ring or the removal of the crown therefrom without breaking the locking ring. I found that even where the crown held satisfactorily when applied, the removal of the crown often caused breakage of the locking ring at the high point of the bottle mouth due to the rounded shape (in cross section) of the locking ring.

The object of this invention is to improve the construction of the bottle to facilitate the application of the crown thereto by a standard bottle crowning machine, permit ready removal of the crown therefrom without breakage of the locking ring, and yet more effectively retain the crown in place during the use of the bottle.

I have shown a preferred embodiment of my invention in the accompanying drawing in which:

Fig. 1 is a side elevation of the top portion of a bottle showing the improved locking ring in place thereon in its relation to the reinforcing ring therebelow;

Fig. 2 is a vertical sectional view therethrough with the crown applied;

Fig. 3 is a similar view of the bottle with the crown removed;

Fig. 4 is a vertical sectional view at right angles thereto on the line 4—4 of Fig. 1; and

Fig. 5 is a top plan view of the bottle taken on the line 5—5 of Fig. 1.

Referring to Figs. 1 to 5, the bottle is designated generally by the numeral 1, and has the usual neck 2, axially aligned with the length of the bottle. At the upper end of the neck 2 is a reinforcing ring 3 while the locking ring is designated generally by the numeral 4.

The locking ring 4 is designed for application thereto of a standard crown 5 which has a crimping edge 6 adapted to be crimped around the locking ring to securely seal the contents of the bottle, for which purpose the crown 5 has a gas-

ket 7 of yielding material, such as cork or the like, which engages the mouth of the bottle or upper edge of the locking ring when the apron on the crown is fitted around and inter-engages with the periphery of the locking ring 4. Since the plane of the mouth of the bottle is arranged at an acute angle to the axis of the bottle and neck, it will be noted that this slanting of the locking ring while keeping its outer surface equidistant from the central axis of the bottle, that the locking ring is elliptical in the form shown.

The locking ring shown in the drawing is characterized by its distinctive shape, as illustrated. At the top of the mouth of the bottle, the locking ring is rounded in cross section at 8, with only a very slight break forming a rounded shoulder at 9. On the opposite side of the neck, the upper edge of the locking ring 4 is formed with a much flatter curve slanting away from the top edge, as designated at 10, and terminating in a substantially abrupt shoulder 11, approximately at the lower edge of the locking ring.

In shaping the locking ring it is graduated in contour from the rounded characteristics thereof in cross section at 8 and 9 to the longer arc or flatter lower edge 10 with its pronounced shoulder 11, while intermediate the high and low edges of the locking ring, the latter approaches the shape in cross section such as has been used generally heretofore, substantially as illustrated in Fig. 4, where the outer edges of the locking ring are designated at 12. As shown in Fig. 4, the locking ring at the mid-portion between the high and low sides of the mouth of the bottle, is substantially the same as the locking ring throughout its circumference as used on the type of bottles usually employed heretofore for beverages that are sealed with a standard crown of the character shown in Fig. 2.

When the crown 5 is fitted to the mouth of the bottle, the apron of the crown is fitted over the locking ring 4 and also the rounded portion thereof as indicated at 8 and 9 at the high side and at 12 at the mid point, while the barbs or indentations formed in the apron of the crown engage the lower edge portion of the locking ring by being pressed around and under the shoulder 11, as indicated in Fig. 2.

In flat top bottles of the type used heretofore the groove between the locking ring 4 and the reinforcing ring 3 is usually of uniform width around the bottle, but it varies in this invention from the low side to the high side of the neck. The bottom of the groove is designated at 13 at

the mid point of the bottle, but it will be noted from Fig. 5 that this groove does not extend parallel with the outer edge of the locking ring, since it is nearer the central axis of the bottle on the lower side of the mouth thereof, as indicated at 14, while the bottom of the groove gradually recedes from the central axis of the bottle until it gets furthest away from the central axis at the side of the mouth, as indicated at 15, while on opposite sides of the neck the depth of the groove is spaced uniformly from the central axis.

Since it is necessary to provide more space for the reception of the apron of the crown at the lower side of the mouth to obtain the proper holding effect on the crown, the groove beneath the locking ring 4 is formed of greater depth at this point, as designated at 14. To provide for this, the bottom of the groove beneath the locking ring is formed substantially in a true circle with the center thereof at 16, which is eccentric of the bottle and its neck, being offset from the bottle axis 17 toward the high side of the mouth, as indicated in Fig. 5.

Since the top of the bottle having such a slanting mouth is substantially wedge-shaped, any means that is provided for removing the crown must necessarily bear against the top of the crown, and then have a member extending around the top edge of the crown and the bottle therebeneath to engage under the edge of the crown to slide or force the crown from the locking ring. To permit of this movement, the bottle must be provided with a rounded glass surface for release of the crown therefrom without injuring the locking ring, for which purpose the locking ring is rounded off. If the locking ring at the top of the mouth of the bottle were of the same shape as shown at 10 and 11, the crown removing means would strike the glass and break or chip off a portion of the locking ring in removing the crown therefrom, but this does not result when the high side of the mouth is formed of rounded shape, as shown at 8 and 9, which is nevertheless sufficiently rounded to engage the apron of the crown for effectively holding the crown in place on the locking ring. The crown 5 may be removed at the high side of the mouth by being engaged adjacent the point shown at 8-9 in Fig. 3, or on either side of said point around to the midpoints 12 (Fig. 4), and then forced upward and away from the low side of the mouth, the latter providing for a hinging action in facilitating the removal of the crown.

When it is desired to use this invention in connection with paper or other fibrous caps, as in milk bottles, it may be desirable to form the locking ring at the top of the bottle, somewhat more rounded than is illustrated in Figs. 1 and 3, but the bottom of the groove below the locking ring would remain substantially of the same shape as illustrated, and the bottom of the groove still re-

maintaining a true circle and off center, as shown in Fig. 5. With this shape the locking ring may be made substantially rounded at its periphery instead of the elliptical shape as shown.

I claim:

1. A bottle comprising a body having a neck thereon provided with a mouth slanting relative to the neck from one side thereof to the opposite side, and a locking ring surrounding the neck adjacent the mouth, said locking ring having a rounded periphery in cross section at the high side of the mouth thereof, and having the periphery thereof in cross section at the low side of the mouth formed of a flatter curve than at the high side extending from the mouth edge inwardly throughout the major portion of the width of the locking ring and terminating in an abrupt under shoulder, said locking ring tapering from the rounded cross section at the high side of the mouth to the shoulder thereon at the low side of the mouth.

2. A bottle comprising a body having a neck thereon provided with a mouth, a locking ring surrounding the mouth and slanting relative to the axis of the neck from one side thereof to the opposite side, said locking ring in cross section at the high side thereof being substantially rounded in contour and at the low side thereof in cross section being of an appreciably flattened contour at the upper side at the mouth edge with a flatter curve than at the high side extending from the mouth edge inwardly throughout the major portion of the locking ring and terminating in an abrupt shoulder at the low side thereof, said locking ring tapering from the rounded contour at the high side of the ring to the flattened contour and shoulder at the low side thereof, said locking ring having the periphery thereof of elliptical shape and having an annular groove beneath said locking ring, said groove being of gradually increasing depth from the high side of the ring to the low side thereof.

3. A bottle comprising a body having a neck thereon provided with a mouth slanting relative to the neck from one side thereof to the opposite side, and a locking ring surrounding the neck adjacent the mouth, said locking ring having a rounded periphery in cross-section with a convex upper edge at the high side of the mouth and a substantially flat upper edge at the low side thereof, and said locking ring having the periphery thereof in cross-section at the low side of the mouth formed of a flatter curve than at the high side extending from said flat upper edge inwardly throughout the major portion of the width of the locking ring and terminating in an abrupt under shoulder, said locking ring tapering from the rounded cross-section at the high side of the mouth to the flattened cross-section and shoulder thereon at the low side of the mouth.

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